

Amendments to the Claims

Claims 1-57 (Canceled)

58. (New) A plasma lamp, comprising:

A solid body of dielectric material with a dielectric constant greater than 2 and having at least a main part with a first surface and a second surface opposed to the first surface;

a feed inserted through the first surface into the main part of the solid body and configured to provide radio frequency energy to the solid body within the range of 0.5 to 30 GHz;

a bulb enclosing a gas fill positioned to receive the radio frequency energy from the solid dielectric body;

the second surface coated with an electrically conductive material; and

at least a portion of the bulb enclosing the gas fill positioned above the main part of the solid body adjacent to the second surface.

59. (New) The plasma lamp of claim 58 further comprising:

a portion of solid dielectric material protruding from the main part of the solid body adjacent to the second surface and surrounding at least a portion of the bulb.

60. (New) The plasma lamp of claim 58 further comprising:

a protruding portion of solid dielectric material surrounding the bulb.

61. (New) The plasma lamp of claim 59 further comprising:

a heat sink surrounding the protruding portion of solid dielectric material.

62. (New) The plasma lamp of claim 58 further comprising:

a power source adapted to provide radio frequency energy to the solid body through the feed at a frequency that resonates within the solid body.

63. (New) The plasma lamp of claim 59 wherein the protruding portion of dielectric material is smaller than the main part of the solid body of dielectric material.

64. (New) The plasma lamp of claim 60 wherein the protruding portion of dielectric material is smaller than the main part of the solid body of dielectric material.

65. (New) The plasma lamp of claim 58 wherein at least a portion of the bulb is positioned over a central region of the main part of dielectric body.
65. (New) The plasma lamp of claim 58 wherein the solid body forms an opening and at least a portion of the bulb is positioned in the opening.
66. (New) The plasma lamp of claim 65, wherein the outer surfaces of the solid body other than the surfaces in the opening are substantially coated with an electrically conductive material.
67. (New) The plasma lamp of claim 58 wherein the bulb is positioned above a plane that contains the second surface.
68. (New) The plasma lamp of claim 58 wherein the dielectric material comprises alumina.
69. (New) The plasma lamp of claim 58 wherein the dielectric material is a dielectric material with a dielectric constant greater than 2.
70. (New) The plasma lamp of claim 58 further comprising:
a power source adapted to provide radio frequency energy to the solid body through the feed at a frequency that resonates within the solid body in a fundamental mode.
71. (New) The plasma lamp of claim 58 further comprising:
a power source adapted to provide radio frequency energy to the solid body through the feed at a frequency that resonates within the solid body, wherein the solid body has at least one dimension equal to about one half wavelength of the resonant energy in the solid body.
72. (New) The plasma lamp of claim 62 wherein the solid body forms an opening and at least a portion of the bulb is positioned in the opening.
73. (New) The plasma lamp of claim 72, wherein the outer surfaces of the solid body other than the surfaces in the opening are substantially coated with an electrically conductive material.
74. (New) The plasma lamp of claim 70 wherein the solid body forms an opening and at least a portion of the bulb is positioned in the opening.
75. (New) The plasma lamp of claim 74, wherein the outer surfaces of the solid body other than the surfaces in the opening are substantially coated with an electrically conductive material.
76. (New) The plasma lamp of claim 58, further comprising a second feed inserted into the solid body.

77. (New) The plasma lamp of claim 76, wherein the second feed is adapted to obtain feedback from the solid body.

78. (New) The plasma lamp of claim 58, further comprising a power source adapted to provide radio frequency energy to the solid body through the feed at a frequency that resonates within the solid body and a second feed inserted into the solid body adapted to sample radio frequency energy from the solid body.

79. (New) The plasma lamp of claim 78, wherein the second feed is coupled to the power source to provide feedback to the power source from the solid body.

80. (New) The plasma lamp of claim 79 wherein the solid body forms an opening and at least a portion of the bulb is positioned in the opening.

81. (New) The plasma lamp of claim 80, wherein the outer surfaces of the solid body other than the surfaces in the opening are substantially coated with an electrically conductive material.